

# WHY PAINT JOBS FAIL

## **ADHESION: (Loss of)**

Carelessness and lack of skillful preparation of the surface are the major causes of poor adhesion. The application of a primer or protective coating material on oily, dirty, greasy or dusty (chalky) surfaces contributes to loss of adhesion. Failure to sand glossy surfaces on interiors or exterior protected areas may result in peeling. Also, failure to use the proper primer for a particular surface will likely lead to adhesion problems.

## **ALLIGATORING: (Crazing)**

The application of a finish coat before undercoats or primers are completely dry can cause cracking of the finish coat. Antique finishes are deliberately produced by the above procedure. A hard drying finish coat over a softer type priming coat will cause cracking. Thus, the proper choice of primer or undercoat is very important.

To avoid cracking or alligatoring allow all primers and undercoats to dry hard and firm before finishing. Always choose the proper primer for a particular type of finish coat.

## **BLEEDING:**

Knots and resinous woods (e.g. Cedar & Redwood), creosote, asphalt or color soluble in oil (Penetrating Stain) will release stain, which will bleed into any new paint surface. Exterior surfaces should be cleaned of all excess material on the surface and then sealed with Bennette Acrylic Stain Primer, 8-230. This same primer can be used on interior surfaces as well to seal crayon, ballpoint pen, magic marker and smoke & water stains to eliminate bleeding.

## **BLISTERING:**

Blistering is caused by pressure under a non-permeable paint film. This pressure may be developed by vapor or moisture. The vapor may come from wood or solvent entrapment in the paint film. Moisture can come from four sources – structural defects, accidental spillage, precipitation and humidity. Permeable (“breathable”) paints, such as 100% acrylic house paint, allow moisture vapor to pass through the film and thus do not blister.

Blisters caused by moisture under the paint film usually are the result of structural defects in the building or high humidity within the home or building. Unseasoned wet wood will also cause blistering.

Vapor or solvent entrapment will also cause blistering when painting is done in direct heat of the sun. The direct sun heat causes the paint to set quickly. The surface vapor is trapped underneath and causes pressure, forming blisters. This usually occurs in the first twenty hours after the paint is applied. Dark colors are usually the worst.

Modern construction tends to intensify high humidity in the home due to insulation, weather stripping, caulking, storm doors and storm sash; the objective is to keep the heat in and the cold out. During the winter this humidity builds up in the home until it reaches almost 90% in midwinter, January and February being the worst months.

The humidity or moisture vapor explained above must escape through open windows or open ventilators of some type. If it does not, it will force itself through the walls and open spaces around doors and windows, condensing in the outside walls, which are cold. Here it forms water and builds up pressure under the paint on siding or trim, causing blistering of the paint. This can be prevented by installing louvers or ventilators to promote air circulation.

## **BLISTERING: (continued)**

If the siding and trim become saturated with moisture they can be ventilated by installing louvers in the siding at the locations badly affected. Also, wedges may be driven under the bottom edge of the siding to allow air circulation under the siding. Louvers or wedges should be placed about 16 inches apart between rows of the nailing of the siding.

All exterior structural defects should be repaired before painting. Leaks in roofs, gutters or spouting should be repaired. Openings around windows, doors, ends of siding and corners should be caulked or puttied after priming. Every measure should be taken to prevent driving rain from entering under the paint film.

## **BLOOMING: (Blushing)**

This condition is caused by moisture getting into the film of varnish, shellac or lacquer. To remove the bloom from varnish, take 1/3 Turpentine, 1/3 Boiled Linseed Oil, 1/3 Paint Thinner, shake thoroughly and moisten a lint-free cloth with the moisture. Gently rub the surface of the varnish until the bloom disappears. To remove the bloom from shellac, use solvent alcohol either by brushing or wiping with a thoroughly saturated lint-free cloth. In the case of a lacquer, use retarder or a slowly evaporating thinner to remove bloom by spraying or brushing.

## **CHALKING:**

Chalking is caused by the deterioration of a paint film. The resultant loose powder (chalk) is a barrier to adhesion for most paints. Latex paints in particular will adhere to the chalk, but not to the surface, eventually resulting in paint failure.

All chalk should be removed by pressure washing, using a chemical cleaner designed to remove chalk. A primer designed for such deteriorated surfaces, like Bennette Acrylic House Paint Primer, 7-225, should be used prior to repainting.

## **CHECKING OR CRAZING:**

This is a mild form of releasing stresses in the film and does not become serious unless the paint is allowed to weather too long. Then flaking may result. Modern paints are formulated to eliminate this condition.

## **CHIPPING: (Flaking)**

This occurs when the paint is completely broken away from the surface. It is usually caused by lack of surface preparation. Cleaning, dusting and the sanding of hard glossy surfaces will prevent this condition.

## **COVERING OR HIDING: (Lack of)**

This is usually caused by not stirring the paint or enamel properly. Stirring with a horizontal motion will not mix the paint properly. Always stir paint with an up and down spiral motion to obtain proper mixing. Pouring the paint from one container into another, often called "boxing the paint" is recommended.

Some colors, such as yellows, pinks and some medium and deep tinted colors, when applied over different colors do not hide satisfactorily. They usually require two or more coats for proper hiding.

## **CRACKING AND SCALING:**

This is a serious paint failure and is usually caused by build-up of too many coats on a surface. Also by applying paint too thickly. The surface splits and curls back due to a hard surface and softness underneath. This does not occur if the proper primer and finish coat are applied evenly and the primer is given enough time to become hard and firm before finishing.

When scaling is bad, all old paint should be removed before repainting.

## **CRAWLING AND CREEPING:**

This condition develops when the paint, varnish or enamel draws up into beads and does not wet the surface. Applying alkyd paint, varnish or enamel on a hard glossy surface in dry weather will develop this condition. It can be eliminated by sanding and then wiping the surface with a pre-paint cleaner. Properly cleaned and prepared surfaces will eliminate crawling and creeping.

## **DISCOLORATION:**

See *Bleeding*

## **EFFLORESCENCE**

Efflorescence is a salt-like deposit, usually caused by moisture in masonry (both painted and unpainted). It looks like frost and if present, must be removed before any paint is applied. Wire brushing and washing usually removes it. If any efflorescent salts remain, wash surface with solution of 1 pint Muriatic Acid in a gallon of water. (Be sure to wear protective glasses and clothing). Rinse off solution and let dry completely. Prior to the application of any coating system, determine the cause of water migration in the masonry and take steps to eliminate it. This will prevent further efflorescence from occurring at damaging the new paint film.

## **FADING OF COLOR:**

Most paints change color to some extent after exposure. Acrylic paints have better color retention than most standard alkyd paints. For best results, use a top quality acrylic coating system (primer & finish) with sufficient finish coat(s) to achieve an adequate, uniform film thickness.

Lighter colors generally keep their color longer than dark colors. For deep colors, try to use factory made colors rather than in-store tinted colors.

## **GHOSTING:**

This condition develops in wall painting due to improper priming of the walls. Walls must be uniform in absorption to eliminate this condition. Always use the recommended primer and sealer.

Modern wall finishes such as the alkyds and acrylic type have virtually eliminated this type of failure due to their self-sealing properties.

## **LOSS OF GLOSS:**

Loss of initial gloss has several causes in the application of paint. On exterior surfaces it may be caused by improper priming. All areas where the old paint has been removed should be spot primed before priming the whole area. This will eliminate the surface porosity, which causes flattening. Also, applying paint in cold, damp or foggy weather can cause dulling of the paint film. Over-thinning paint is also detrimental to a good gloss.

## **LOSS OF GLOSS: (continued)**

Insufficient drying time between coats causes trouble with gloss. Frost condensing on a freshly painted surface may cause the paint to flatten immediately or start some paints to chalk excessively.

To avoid flattening of fresh paint films, prime properly, avoid unnecessary thinning, clean surfaces thoroughly and paint in good weather, above 50° F.

## **MILDEW:**

Mildew is a dark fungus growth that thrives on paint films that have not been properly formulated to resist mildew. This growth is not easily removed and is characterized by black spores resembling flyspecks or in long, string-like fibres.

Wash the surface clean with a solution of 3 heaping tablespoons of trisodium phosphate per gallon of water. (If mildew is heavy, include 1-1/2 cups of hypochlorite household bleach such as Clorox.) Rinse thoroughly with clean water and allow to dry before painting.

## **SAGGING AND RUNNING:**

Sagging occurs when paint has been applied too heavily on a vertical surface. Runs appear when too much paint has been applied to one spot. Correct brushing and careful application in an even uniform manner will generally prevent this condition. Sometimes application over a hard glossy surface will cause sagging. Sanding thoroughly will overcome this condition. Modern paints will not sag if applied properly.

## **SPALLING:**

Spalling is recognized when pieces of masonry or brick, split and flake off. Minute cracks in concrete, brick, or mortar joints if not filled properly with paint will allow moisture to enter. In winter this moisture freezes and swells, splitting off small pieces of masonry. Paint improperly applied over a porous surface may not close these cracks and crevices. The surface, due to spalling, gradually erodes, eventually breaking down the surface of the masonry. The use of an acrylic surface conditioner and proper priming will help overcome this condition.

## **TACKINESS AND SLOW DRY:**

This is usually due to applying a second or third coat too quickly, before the previous coat has had sufficient time to dry. Always follow label and product data sheet directions regarding recoat times.

The application of paint in damp, foggy or cold weather (below 50°F) will also cause slow drying. To avoid slow drying, paint only on a thoroughly prepared and cleaned surface, free of all wax, oil and dirt; and paint in good weather.

When painting with alkyd paints in closed areas allow sufficient ventilation for proper drying or paints will remain soft and tacky.

## **WRINKLING:**

Paint applied too heavily will often surface dry and wrinkle. If paint is too heavy, thin with a small amount of the recommended thinner and brush evenly to avoid wrinkling. When too thick a coat of paint is applied, it surface dries and remains soft underneath. The top of the film dries and swells, causing wrinkling. Wrinkled surfaces should be allowed to harden; then sand smooth and recoat properly. Paint only when temperature is above 50°F.

## **YELLOWING:**

A paint or varnish is said to yellow if it develops a yellow or brownish discoloration. Yellowing may be caused by lack of natural light (sunlight), or in some instances, by exposure to sunlight. Other contributing factors are moisture, heat, fumes, or misuse of a product.

Certain paint additives on the market contain ingredients that cause yellowing. Additives should never be used unless recommended by the manufacturers of the paint or enamel.

Technical improvements incorporated in modern paint products have materially reduced or eliminated this yellowing tendency. Where a coating is subjected to fumes or other unusual conditions, only products recommended for that particular environment should be used.